

FIRST AUSTRALIAN RECORD OF *PARTHENOS TIGRINA* (M. SNELLEN VAN VOLLENHOVEN, 1886) (LEPIDOPTERA: NYMPHALIDAE: NYMPHALINAE)

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Abstract

Parthenos tigrina cynailurus Fruhstorfer, 1915 is recorded from Saibai, Dauan and Mer (Murray) Islands, Torres Strait, Queensland, Australia for the first time. The circumstances of this event are described and its significance as a random dispersal rather than a true migration is discussed.

Introduction

The genus *Parthenos* Hübner, 1819 contains three species occurring throughout the Indo-Australian Region from Sri Lanka and India to New Guinea and the Solomon Islands, with all three species occurring on the island of New Guinea (Parsons 1998). *Parthenos sylvia* (Cramer, 1775) is widespread, its range extending from Sri Lanka and India to the Solomons (Parsons 1998). D'Abrera (1978) recognised 16 subspecies, with *P. s. guineensis* Fruhstorfer, 1898; *P. s. coupei* Ribbe, 1898; *P. s. admiralia* Rothschild, 1915; and *P. s. thesaurus* Matthew, 1887 occurring in New Guinea. The subspecies *P. s. guineensis* occurs on mainland Papua New Guinea (Parsons 1998). *Parthenos aspila* Honrath, 1888 is confined to northern New Guinea and *P. tigrina* (M. Snellen van Vollenhoven, 1886) is confined to New Guinea (Parsons 1998). D'Abrera (1978) recognised three subspecies of *P. tigrina*, of which only *P. t. cynailurus* Fruhstorfer, 1915 occurs in southern Papua New Guinea.

Little is known of the life history of *P. tigrina* but Parsons (1998) noted that the exuvium of a final instar larva attached to a pupa found at Brown River near Port Moresby by H. Rouber was similar to that of *P. sylvia*. Parsons (1998) noted that *Adenia* and *Modecca* (Passifloraceae) were recorded as larval food plants for *Parthenos*; however, he considered that these records needed confirmation. Parsons (1998) suggested that the woody climbers *Tinospora dissitiflora* Diels and *T. glabra* (Burm.f.) Merr. (Menispermaceae) were the most likely foodplants for *P. sylvia* in lowland Papua New Guinea.

In January and February 2016, numerous adults of *P. t. cynailurus* (Figs 1-2) were observed and collected on Saibai, Dauan and Mer (Murray) Islands, Torres Strait, Queensland, representing a new butterfly record for Australia and Torres Strait. Here we illustrate the butterfly, provide field observations and discuss the dispersal of the butterfly from neighbouring Papua New Guinea.

Abbreviations for specimen repositories: ANIC – Australian National Insect Collection, Canberra; CEMC – C.E. Meyer Collection, Brisbane; CGMC – C.G. Miller Collection, Lennox Head; DALC – D.A. Lane Collection, Atherton; RPWC – R.P. Weir Collection, Bees Creek; SSBC – S.S. Brown Collection, Bowral; TLIKC – Joint collection of T.A. Lambkin and A.I. Knight, Brisbane.

Abbreviations for collectors: CEM – C.E. Meyer; CGM – C.G. Miller; DAL – D.A. Lane; EJLH – E.J.L. Hallstrom; RPW – R.P. Weir; SSB – S.S. Brown; TAL – T.A. Lambkin; WWB – W.W. Brandt.

Material examined

Parthenos tigrina cynailurus Fruhstorfer, 1915

(Figs 1-4)

QUEENSLAND: 1 ♂, Saibai Island, Torres Strait, 22.i.2016, CEM, SSB, RPW & CGM; 8 ♂♂, Dauan Island, Torres Strait, 22-29.i.2016, CEM, SSB, RPW & CGM (in CEMC); 13 ♂♂, Dauan Island, Torres Strait, 22-29.i.2016, SSB, CEM, RPW & CGM (12 in SSBC, 1 in TLIKC); 13 ♂♂, Dauan Island, Torres Strait, 22-29.i.2016, CGM (in CGMC); 11 ♂♂, Dauan Island, Torres Strait, 22-29.i.2016, RPW, SSB, CEM & CGM (in RPWC); 1 ♂, Mer Island, Torres Strait, 29.i.2016, TAL (in TLIKC); 1 ♂, Dauan Island, Torres Strait, 2.ii.2016, DAL (in DALC).

PAPUA NEW GUINEA: 1 ♂, Kiunga, Fly River, 2.vii-31.x.1957, WWB, 10.x.1957 (ANIC Database No. 31 029643); 2 ♂♂, same data except 9.ix.1957 (ANIC Database Nos. 31 029642, 31 029644); 1 ♂, same data except 20.vii.1957 (ANIC Database No. 31 029645); 1 ♂, same data except 15.vii.1957 (ANIC Database No. 31 029647); 1 ♂, Subitana (Central District), 1800 ft, 7.vii.1949, WWB & EJLH (ANIC Database No. 31 029646); 1 ♀, same data except 4.xii.1949 (ANIC Database No. 31 029649); 1 ♀, same data except 24.i.1950 (ANIC Database No. 31 029648); 1 ♀, same data except 9.i.1950 (ANIC Database No. 31 029650).

Observations

On 22 January 2016, the authors observed several specimens of *P. tigrina* flying along tracks and in gardens in the village on Saibai Island, northern Torres Strait. A single specimen was captured by one of us (CEM). Over the following eight days, on nearby Dauan Island, 46 males were examined and many others observed, with numbers estimated to total over 100. Subsequently, on Mer (Murray) Island, eastern Torres Strait, four specimens of *P. tigrina* were observed on 29 January 2016, with one captured. Another was observed on 30 January 2016 but not captured. (T.A. Lambkin and A.I. Knight pers. comm.).

All butterflies examined were newly emerged, although many had wing damage that might have been from bird attack. They flew rapidly, settling briefly to draw nectar from the blossom of various trees growing in the village, predominantly mango, *Mangifera indica* L. and fiddlewood, *Citharexylum spinosum* L. They were observed all over the island in various habitats, from mangroves to open grassy areas, village streets and gardens

and semi-deciduous vine thicket. One was captured on the summit of Mount Cornwallis on Dauan Island at an altitude of 300 m. Their flight was random and generally lacking in purposeful direction. Some were observed flying with the prevailing wind from the Papua New Guinea mainland to the north. Others flew into the wind out to sea and, on a tour around the island by boat, we followed a number for approximately 500 m over water. Others were seen to return to a position several times over about 30 mins after being disturbed. No females were observed or captured.



Figs 1-2. *Parthenos tigrina cynailurus*, male [forewing length 47 mm, wingspan 78 mm], Dauan Island, Torres Strait, 22-29.i.2016, CEM, SSB, RPW & CGM: (1) upperside; (2) underside.



Figs 3-4. *Parthenos tigrina cynailurus*, female [forewing length 45 mm, wingspan 80 mm], Subitana (Central District), 1800 ft, 4.xii.1949, WWB & EJLH (ANIC Database No. 31 029649): (3) upperside; (4) underside.

Also present in larger numbers than recorded in previous years was *Libythea geoffroyi* Godart, 1820 (Nymphalidae: Libytheinae), which was known previously from the Torres Strait islands from only a handful of specimens. Both males and females were encountered in the first three days on Dauan Island, with no more observed for the remainder of the survey.

Unusually for late January, the wet season had not yet begun and conditions were dry with a moderate to strong northerly wind.

Discussion

The butterfly fauna of the Torres Strait islands has been studied intensively over the past 30 years or so and, as *P. tigrina* is a large and conspicuous insect, it is unlikely to have been overlooked previously. There have been no recorded instances of migration in any of the three *Parthenos* species and the non-purposeful flight behaviour of *P. tigrina* observed in the Torres Strait in January 2016 does not agree with the concept of a migration according to Williams (1930).

Parsons (1998) noted that during several days in March 1983 he witnessed numerous adults of *Papilio fuscus* Goeze, 1779, *Catopsilia pomona* (Fabricius, 1775), *Libythea geoffroyi*, *Euploea stephensii* C. & R. Felder, 1865, *Cyrestris achates* (Godart, 1819) and *Yoma sabina* (Stoll, 1780) all purposely moving in a single direction across open town areas of Port Moresby. This seasonal migration at the end of the dry season could explain the increased numbers of *Libythea geoffroyi* encountered by us on Dauan Island.

Parsons (1998) referred to the appearance of large numbers of male *P. tigrina* near Port Moresby after overnight rain, this presumably being a mass emergence. It is highly probable that our observations are the result of dispersal following a similar event on the mainland of Papua New Guinea.

The size of the specimens observed in this survey varied considerably (forewing length 39-50 mm (n = 46)), and this might have been caused by a larger than usual number of larvae competing for a limited supply of the food plant. The apparent mass population movement of *P. tigrina* into Torres Strait recorded here supports the suggestion put forward by Kikkawa *et al.* (1981) that occasional records of some New Guinea species in Cape York Peninsula may be the result of such sporadic dispersals, or even temporary establishment, of New Guinea butterfly species at intervals of many years. The distances involved, approximately 10 km for Dauan and Saibai Islands and 120 km for Mer Island, would not be prohibitive for a powerful flyer with a following wind.

Parthenos tigrina was not observed on Horn or Thursday Islands, 150 km south of Papua New Guinea during our stay from 29-31 January 2016. A further specimen of *P. tigrina* was captured by David Lane on Dauan Island on 2 February 2016, with adults still being observed in lower numbers on Dauan Island and flying over water around and between Dauan and Saibai Islands, up until mid-February 2016 (D. Lane and E. and W. Phillips, pers. comms). No specimens were recorded by Ian Johnson and Peter Wilson during a further survey of Dauan Island in March 2016.

Tinospora smilacina Benth. and *Hypserpa laurina* (F.Muell.) Diels (both Menispermaceae) and *Passiflora foetida* L. (Passifloraceae) are recorded from Dauan Island (Torres Strait Regional Authority 2013) and could be

used, if females were present, by *P. tigrina* as food plants in order to establish a permanent presence on Dauan Island.

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